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Gannon et al.

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[54] **TELEMETRY SYSTEM USING BROADBAND CORRELATION TECHNIQUES**

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[52] **U.S. Cl.** **340/870.13**; 340/870.11; 370/307; 370/479

[58] **Field of Search** 340/870.11, 870.13, 340/870.14; 370/307, 479, 537; 455/227

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[57] **ABSTRACT**

An efficient and cost effective analog telemetry system for transmitting and receiving many individual data channels over long distances is provided by having each data channel signal modulate a pseudo-random number (PRN) signal which has been delayed for a distinct number of clock cycles for each data channel. The modulated PRN signals are then outputted to a single data line and summed. At the remote receiver, each data signal is recovered by cross correlating the modulated PRN signals with individual reference PRN signals. A synchronous delay generator in each data channel properly aligns each reference signal in time with its corresponding modulated PRN signal. Other modulated PRN signals, which are not aligned with the proper reference PRN signal, are rejected.

11 Claims, 3 Drawing Sheets